



## Early Journal Content on JSTOR, Free to Anyone in the World

This article is one of nearly 500,000 scholarly works digitized and made freely available to everyone in the world by JSTOR.

Known as the Early Journal Content, this set of works include research articles, news, letters, and other writings published in more than 200 of the oldest leading academic journals. The works date from the mid-seventeenth to the early twentieth centuries.

We encourage people to read and share the Early Journal Content openly and to tell others that this resource exists. People may post this content online or redistribute in any way for non-commercial purposes.

Read more about Early Journal Content at <http://about.jstor.org/participate-jstor/individuals/early-journal-content>.

JSTOR is a digital library of academic journals, books, and primary source objects. JSTOR helps people discover, use, and build upon a wide range of content through a powerful research and teaching platform, and preserves this content for future generations. JSTOR is part of ITHAKA, a not-for-profit organization that also includes Ithaka S+R and Portico. For more information about JSTOR, please contact [support@jstor.org](mailto:support@jstor.org).

## MESSIER'S CATALOG OF NEBULAE AND CLUSTERS.

Messier's catalog, which contains nearly all the brightest and most striking nebulae and clusters north of declination  $-35^{\circ}$ , was published in the *Connaissance des Temps* in 1784. The original memoir can be found in few if any of the libraries of American observatories, and probably in only a small number of university or public collections.

Most of the Messier numbers, however, have been identified with numbers of Dreyer's *New General Catalogue*, (generally known as the *N. G. C.*), and a list has been given by Holden (*Smithsonian Misch. Coll.* No. 311), identifying Messier's designations with numbers of Sir John Herschel's *General Catalogue* (the *G. C.*). Auwers examined systematically the data for the positions of these objects (*Königsberg Obsns.*, 34, 155, 1862); and observational notes made by Sir William Herschel a hundred years ago relative to a majority of Messier's nebulae and clusters were published a few years ago in an appendix to his collected works (*Vol. 2, p. 651*, 1912). A synopsis by Gore of the earlier descriptions appeared in the *Observatory* in 1902 and was reprinted, with some additions and alterations, in *Sirius* in the same year.

None of the above recom compilations of Messier's list is complete, and none gives positions and brief descriptions in a convenient tabular form. As Messier's numbers are in very general use, it may not be out of place to give the following reference table. The identifications and positions are chiefly from the *N. G. C.*, from various Harvard catalogs, or, in the case of a few objects, from the work of Auwers or the Herschels. The indication of the nature of each object (the last column) is obtained from many different modern sources, but mainly from the published work of Harvard, Lick, and Greenwich (*Mem. R. A. S.*, 60, 175, 1915), and from photographs made at Mount Wilson. Books from the libraries of the University of California and the Lick Observatory have been kindly lent for use in this tabulation, and Professor Bailey has consulted a copy of the original catalog in the Boston Public Library and writes the note following the table relative to the identification of No. 102.

| Messier  | N.G.C. | R. A.<br>(1900.0)                 | Dec.<br>(1900.0) | Galactic<br>Longi-<br>tude | Galactic<br>Lat-<br>tude | Description                    |
|----------|--------|-----------------------------------|------------------|----------------------------|--------------------------|--------------------------------|
| 1        | 1952   | 5 <sup>h</sup> 28 <sup>m</sup> .5 | +21° 57'         | 153°                       | - 4°                     | Craib Nebula                   |
| 2        | 7089   | 21 28.3                           | - 1 16           | 22                         | -37                      | Globular cluster               |
| 3        | 5272   | 13 37.6                           | +28 53           | 8                          | +77                      | Globular cluster               |
| 4        | 6121   | 16 17.5                           | -26 17           | 319                        | +15                      | Globular cluster               |
| 5        | 5904   | 15 13.5                           | + 2 27           | 333                        | +45                      | Globular cluster               |
| 6        | 6405   | 17 33.5                           | -32 9            | 325                        | - 3                      | Open cluster                   |
| 7        | 6475   | 17 47.3                           | -34 47           | 324                        | - 6                      | Open cluster                   |
| 8        | 6523   | 17 57.6                           | -24 23           | 334                        | - 3                      | Irregular nebula               |
| 9        | 6333   | 17 13.3                           | -18 25           | 334                        | + 9                      | Globular cluster               |
| 10       | 6254   | 16 51.9                           | - 3 57           | 343                        | +22                      | Globular cluster               |
| 11       | 6705   | 18 45.7                           | - 6 23           | 355                        | - 4                      | Open cluster                   |
| 12       | 6218   | 16 42.0                           | - 1 46           | 344                        | +25                      | Globular cluster               |
| 13       | 6205   | 16 38.1                           | +36 39           | 26                         | +40                      | Globular cluster<br>(Hercules) |
| 14       | 6402   | 17 32.4                           | - 3 11           | 349                        | +14                      | Globular cluster               |
| 15       | 7078   | 21 25.2                           | +11 44           | 33                         | -29                      | Globular cluster               |
| 16       | 6611   | 18 13.2                           | -13 49           | 345                        | - 1                      | Open cluster                   |
| 17       | 6618   | 18 15.0                           | -16 13           | 342                        | - 2                      | Horse shoe or Omega<br>nebula  |
| 18       | 6613   | 18 14.1                           | -17 10           | 341                        | - 1                      | Open cluster                   |
| 19       | 6273   | 16 56.4                           | -26 7            | 325                        | + 8                      | Globular cluster               |
| 20       | 6514   | 17 56.3                           | -23 2            | 335                        | - 2                      | Trifid nebula                  |
| 21       | 6531   | 17 58.6                           | -22 30           | 336                        | - 2                      | Open cluster                   |
| 22       | 6656   | 18 30.3                           | -23 59           | 338                        | - 9                      | Globular cluster               |
| 23       | 6494   | 17 51.0                           | -19 0            | 337                        | + 1                      | Open cluster                   |
| 24       | 6603   | 18 12.6                           | -18 27           | 341                        | - 3                      | Open cluster                   |
| 25 I. C. | 4725   | 18 25.8                           | -19 19           | 341                        | - 5                      | Open cluster                   |
| 26       | 6694   | 18 39.8                           | - 9 30           | 351                        | - 4                      | Open cluster                   |
| 27       | 6853   | 19 55.3                           | +22 27           | 29                         | - 4                      | Dumb bell nebula               |
| 28       | 6626   | 18 18.4                           | -24 55           | 336                        | - 7                      | Globular cluster               |
| 29       | 6913   | 20 20.3                           | +38 12           | 44                         | 0                        | Open cluster                   |
| 30       | 7099   | 21 34.7                           | -23 38           | 356                        | -48                      | Globular cluster               |
| 31       | 224    | 0 37.3                            | +40 43           | 89                         | -20                      | Andromeda nebula               |
| 32       | 221    | 0 37.2                            | +40 19           | 89                         | -21                      | Nebula                         |
| 33       | 598    | 1 28.2                            | +30 9            | 102                        | -30                      | Spiral nebula                  |
| 34       | 1039   | 2 35.6                            | +42 21           | 111                        | -15                      | Open cluster                   |
| 35       | 2168   | 6 2.7                             | +24 21           | 154                        | + 4                      | Open cluster                   |
| 36       | 1960   | 5 29.5                            | +34 4            | 142                        | + 2                      | Open cluster                   |
| 37       | 2099   | 5 45.8                            | +32 31           | 145                        | + 4                      | Open cluster                   |
| 38       | 1912   | 5 22.0                            | +35 45           | 140                        | + 2                      | Open cluster                   |
| 39       | 7092   | 21 28.6                           | +48 0            | 60                         | - 3                      | Open cluster                   |
| 40       | ....   | 12 17.4                           | +58 40           | ....                       | ....                     | Two faint stars*               |
| 41       | 2287   | 6 42.7                            | -20 38           | 199                        | - 9                      | Open cluster                   |
| 42       | 1976   | 5 30.4                            | - 5 27           | 176                        | -18                      | Orion nebula                   |
| 43       | 1982   | 5 30.6                            | - 5 20           | 176                        | -18                      | Irregular nebula               |
| 44       | 2632   | 8 34.3                            | +20 20           | 173                        | +34                      | Praesepe                       |
| 45       | ....   | 3 41.5                            | +23 48           | 135                        | -23                      | Pleiades†                      |
| 46       | 2437   | 7 37.2                            | -14 35           | 200                        | + 6                      | Open cluster                   |
| 47       | 2478   | 7 50.2                            | -15 9            | 201                        | + 7                      | Cluster                        |
| 48       | ....   | 8 9.0                             | - 1 39           | 192                        | +29                      | Very open cluster              |
| 49       | 4472   | 12 24.7                           | + 8 33           | 259                        | +70                      | Nebula                         |
| 50       | 2323   | 6 58.2                            | - 8 12           | 190                        | 0                        | Open cluster                   |
| 51       | 5194   | 13 25.7                           | +47 43           | 68                         | +71                      | Spiral nebula                  |
| 52       | 7654   | 23 19.8                           | +61 3            | 81                         | + 1                      | Cluster                        |
| 53       | 5024   | 13 8.0                            | +18 42           | 307                        | +79                      | Globular cluster               |
| 54       | 6715   | 18 48.7                           | -30 36           | 333                        | -16                      | Globular cluster               |
| 55       | 6809   | 19 33.7                           | -31 10           | 336                        | -25                      | Globular cluster               |
| 56       | 6779   | 19 12.7                           | +30 0            | 30                         | + 7                      | Globular cluster               |
| 57       | 6720   | 18 49.9                           | +32 54           | 30                         | +13                      | Ring nebula in Lyra            |
| 58       | 4579   | 12 32.7                           | +12 22           | 259                        | +75                      | Spiral nebula                  |

| Messier | N.G.C. | R. A.           |                    | Dec.     |     | Galactic |       | Description       |
|---------|--------|-----------------|--------------------|----------|-----|----------|-------|-------------------|
|         |        | (1900.0)        |                    | (1900.0) |     | Longi-   | Lati- |                   |
|         |        |                 |                    |          |     | tude     | tude  |                   |
| 59      | 4621   | 12 <sup>h</sup> | 37 <sup>m</sup> .0 | +12°     | 12' | 263°     | +75°  | Spiral nebula     |
| 60      | 4649   | 12              | 38.6               | +12      | 6   | 265      | +75   | Nebula            |
| 61      | 4303   | 12              | 16.8               | +5       | 2   | 256      | +66   | Spiral nebula     |
| 62      | 6266   | 16              | 54.8               | -29      | 58  | 321      | +6    | Globular cluster  |
| 63      | 5055   | 13              | 11.3               | +42      | 34  | 69       | +74   | Spiral nebula     |
| 64      | 4826   | 12              | 51.8               | +22      | 13  | 295      | +84   | Spiral nebula     |
| 65      | 3623   | 11              | 13.7               | +13      | 38  | 209      | +64   | Spiral nebula     |
| 66      | 3627   | 11              | 15.0               | +13      | 32  | 211      | +64   | Spiral nebula     |
| 67      | 2682   | 8               | 45.8               | +12      | 11  | 183      | +34   | Open cluster      |
| 68      | 4590   | 12              | 34.2               | -26      | 12  | 268      | +35   | Globular cluster  |
| 69      | 6637   | 18              | 24.8               | -32      | 25  | 329      | -12   | Globular cluster  |
| 70      | 6681   | 18              | 36.7               | -32      | 23  | 330      | -14   | Globular cluster  |
| 71      | 6838   | 19              | 49.3               | +18      | 31  | 24       | -6    | Open cluster      |
| 72      | 6981   | 20              | 48.0               | -12      | 55  | 3        | -34   | Globular cluster  |
| 73      | 6994   | 20              | 53.5               | -13      | 1   | 3        | -36   | Open cluster      |
| 74      | 628    | 1               | 31.3               | +15      | 16  | 107      | -46   | Spiral nebula     |
| 75      | 6864   | 20              | 0.2                | -22      | 12  | 348      | -28   | Globular cluster  |
| 76      | 650    | 1               | 36.0               | +51      | 4   | 98       | -11   | Gaseous nebula    |
| 77      | 1068   | 2               | 37.6               | -0       | 26  | 141      | -52   | Spiral nebula     |
| 78      | 2068   | 5               | 41.6               | +0       | 1   | 173      | -14   | Irregular nebula  |
| 79      | 1904   | 5               | 20.1               | -24      | 37  | 195      | -28   | Globular cluster  |
| 80      | 6093   | 16              | 11.1               | -22      | 44  | 320      | +18   | Globular cluster  |
| 81      | 3031   | 9               | 47.3               | +69      | 32  | 109      | +42   | Spiral nebula     |
| 82      | 3034   | 9               | 47.5               | +70      | 10  | 109      | +42   | Spiral nebula     |
| 83      | 5236   | 13              | 31.4               | -29      | 21  | 283      | +31   | Spiral nebula     |
| 84      | 4374   | 12              | 20.0               | +13      | 26  | 251      | +74   | Nebulous spot     |
| 85      | 4382   | 12              | 20.4               | +18      | 45  | 243      | +80   | Nebula            |
| 86      | 4406   | 12              | 21.1               | +13      | 30  | 251      | +74   | Nebulous spot     |
| 87      | 4486   | 12              | 25.8               | +12      | 57  | 256      | +74   | Nebula            |
| 88      | 4501   | 12              | 26.9               | +14      | 58  | 256      | +76   | Spiral nebula     |
| 89      | 4552   | 12              | 30.6               | +13      | 6   | 260      | +75   | Nebula            |
| 90      | 4569   | 12              | 31.8               | +13      | 43  | 260      | +75   | Spiral nebula     |
| 91      | ....   | 12              | 36..               | +13      | 50  | ....     | ....  | Probably a comet. |
|         |        |                 |                    |          |     |          |       | See N. G. C. 4571 |
| 92      | 6341   | 17              | 14.1               | +43      | 15  | 35       | +34   | Globular cluster  |
| 93      | 2447   | 7               | 40.4               | -23      | 38  | 207      | +2    | Open cluster      |
| 94      | 4736   | 12              | 46.2               | +41      | 40  | 76       | +86   | Spiral nebula     |
| 95      | 3351   | 10              | 38.7               | +12      | 14  | 201      | +57   | Spiral nebula     |
| 96      | 3368   | 10              | 41.5               | +12      | 21  | 204      | +58   | Spiral nebula     |
| 97      | 3587   | 11              | 9.0                | +55      | 34  | 114      | +57   | Owl nebula        |
| 98      | 4192   | 12              | 8.7                | +15      | 27  | 234      | +75   | Spiral nebula     |
| 99      | 4254   | 12              | 13.8               | +14      | 58  | 244      | +75   | Spiral nebula     |
| 100     | 4321   | 12              | 17.9               | +16      | 23  | 246      | +77   | Spiral nebula     |
| 101     | 5457   | 13              | 59.6               | +54      | 50  | 68       | +59   | Spiral nebula     |
| 102     | 5866?  | 15              | 3.8                | +56      | 9   | 58       | +52   | Spiral nebula†    |
| 103     | 581    | 1               | 26.6               | +60      | 11  | 96       | -1    | Open cluster      |

\*Two faint stars close together found in a position given by Hevelius, who appears to have mistaken these stars for a nebula.

†Position for *Alcyone* (1000).

‡Subsequent to Messier there appears to be no further mention of No. 102. The reason for this is obvious from the following notes taken from a letter by Professor Bailey.

"Messier's list comprises one hundred and three objects. For all of them positions are given, except for 102 and 103. For these only descriptions are given, as follows:

102. Nébuleuse entre les étoiles  $\alpha$  du Bouvier et  $\epsilon$  du Dragon; elle est très-faible: près d'elle est une étoile de la sixième grandeur.

103. Amas d'étoiles entre  $\epsilon$  et  $\delta$  de la jambe de Cassiopée. By star chart, or the sky, you will see that, taken as it stands, no object could well be selected for M 102, since  $\alpha$  *Bode's* is too far from  $\epsilon$  *Dracons*. If, however,  $\alpha$  is a misprint for  $\theta$ , it becomes intelligible, and M 102 is perhaps N. G. C. 5866, altho in Norton's Atlas it is apparently identified as N. G. C. 5879. On our photographs, however, N. G. C. 5866 appears to be the brightest object in this region."

The visual observations of these neighboring nebulae by the Herschels show N. G. C. 5866 much the brighter, and its identity with M 102 can be accepted as quite probable.

HARLOW SHAPLEY AND HELEN DAVIS.